# Combined Endeavor

## *Combined Endeavor links NATO and Partnership for Peace nations together with advanced technology*

By Sharon Anderson

Combined Endeavor is the largest security cooperation and communications exercise in the world. The multinational exercise brings NATO and Partnership for Peace (PfP) nations together to plan and execute interoperability testing of command, control, communications and computer (C4) systems from participant nations to support future combined humanitarian, peacekeeping and disaster relief operations.

*U.S. Army Lt. Col. Joe Angyal (left) and U.S. Navy Cmdr. Stephan Abel during a virtual interview conducted May 23, 2006, with Angyal located in Baumholder, Germany at Lager Aulenbach training facility and the CHIPS staff on board Naval Station Norfolk, Va.*

The U.S. European Command (USEUCOM) sponsored the twelfth annual "in-spirit-of" PfP communications exercise from May 12 through 25 on Lager Aulenbach in Baumholder, Germany, and at the forward operating site at the U.S. Eagle Base located outside of Tuzla, Bosnia-Herzegovina.

More than 1,200 different interoperability tests were conducted that will be added to the existing 12,000 technical test results currently in the Combined Endeavor interoperability guide. Approximately 1,200 military and civilian experts from 41 partner nations took part in the multinational exercise.

In total, Combined Endeavor 2006 lasted almost two months and was conducted in four phases. In Phase 1 (April 10 - May 5), the host nation, Germany, in conjunction with U.S. Army Europe (USAREUR) and U.S. Air Forces Europe (USAFE) prepared the main operating base (MOB) and the forward operating site (FOS). For Phase 2 (May 5 - May 11), coalition forces deployed to the MOB and FOS and established operating sites. Not only did Germany provide the base for the exercise, it provided 194 individuals for site build-up and tear-down.

During Phase 3 (May 12 - May 25), C4 forces established a core multinational network for common interoperability standards testing. In Phase 4 (May 26 - June 3), the massive assembly of coalition forces and equipment were returned to their respective home nations along with USAREUR and USAFE support elements.

Tests were conducted with navies from several countries including Germany, Italy and Sweden.

U.S. Marine Corps information technology specialists participated as well by chairing the newly stood-up Knowledge Management Panel and providing on-site expertise to the collaborative portal that was used for all information sharing throughout the exercise.

U.S. Army Lt. Col. Joe Angyal is the Combined Endeavor director. Angyal works directly for Air Force Brig. Gen. Tom Verbeck, Director of Command, Control, Communications and Warfighting Integration, Headquarters, U.S. European Command, Stuttgart-Vaihingen, Germany. According to Angyal, most of the barriers to interoperability among nations involve protocols and security policies.

"The main challenge as we move toward almost everything over IP (Internet Protocol) is sharing information. Often it is not technology; it is the policies that govern or protect that information that seem to be the next challenge that we face," Angyal said.

But interoperability is getting better among partnering nations, according to Angyal.

"There are several demonstrations and tests going on this year which are tackling that challenge head on, how to share information in a multinational environment," Angyal said. "The scenario we are using to test our common operational picture is linked to an earthquake in Armenia, which is linked directly to another U.S. exercise called Rescuer 2006. A Combined Joint Task Force Headquarters is joined together and while staff members are doing humanitarian assistance, there is a radiological device or some sort of dirty bomb set off by terrorists. The scenario goes the full spectrum from assistance to consequence management."

Cultural diversity is also figured into the interoperability piece along with identifying roles and responsibilities and testing doctrine. "If you can think of it as a pyramid and the pyramid was drawn into four layers, the bottom layer would represent human interoperability and the ability to understand each other's cultures and business practices. That is the foundation for testing the interoperability at the other three levels," Angyal said.

"As you move up that pyramid, the next level would be the technical interoperability, the means to pass the 1s and 0s. That would set the stage for becoming interoperable at the procedural level, the policies, the tactics, techniques and procedures that govern the

networks. Finally, at the top of the pyramid would be operational interoperability where we test operationally here in the exercise and then deploy it on a real-world mission."

Led by U.S. forces, no civil or humanitarian organizations participated in Combined Endeavor operations.

"This is a U.S. facilitated event with only military forces here. We exclude private corporations as well. These are the actual people that deploy and fight and use the equipment in the field," Angyal said. "There are other interoperability events, such as Strong Angel, conducted by the U.S. Defense Department that focus specifically on civil preparedness or working with non-governmental organizations."

The virtual interview conducted May 23, 2006, with Angyal located at the Lager Aulenbach training facility and the *CHIPS* staff on board Naval Station Norfolk, Va., used a Web-based desktop video conferencing application called VSee. VSee allows document sharing and the ability to see and hear conference participants via webcams and microphones. Tom Condon, an employee of the Space and Naval Warfare Systems Center Charleston, European Office (SPAWAR Europe) and a captain in the Army Reserve, assisted the public affairs office by keeping the technology up and running for the webcasts.

Emily Snell, another SPAWAR Europe employee, chaired the Knowledge Management Panel that was in charge of providing the tools and technologies for all information sharing requirements for the exercise. The collaborative portal, built on PfP Information Management System (PIMS) technology, provided the single point for all operational and administrative information and was used throughout the planning and execution stages of the exercise.

SPAWAR Europe took over PIMS program management just a little over a year ago. PIMS provides support to PfP exercises and spearheads knowledge management and information sharing initiatives with PfP nations, NATO and the United States. The PIMS portal solution that was utilized provided significant benefits to the operations of the exercise and will continue to be used for planning and executing future Combined Endeavors.

In addition to the KM support for both the operational and the public affairs arenas, SPAWAR supported the forward operating site in Tuzla, Bosnia, with hardware, software and network support.

Partnership for Peace is a program of practical bilateral cooperation between individual PfP countries and NATO. Each of the participating nations has varying degrees of technology development. According to Angyal, one of the big focus areas this year was testing the disparate software tools used by the multinational coalition for displaying the common operational picture. U.S. forces tested C2PC, (Command and Control Personal Computer), an application produced by Northrop Grumman.

"You link to the Blue Force Tracker deployed across the battlespace, and it allows you to see where you are, where your buddy is, and where the enemy is. Since it is commercial software, every nation uses similar software produced by its own nation, and it is tough to get all of those to work together," Angyal said.

Testing is important because technology changes rapidly, according to Angyal. "People ask many times why we conduct Combined Endeavor every year and the very reason is because nations continue on an annual basis to field new and upgraded technology."

Besides the immediate questions of interoperability and planning in the event of a national emergency among member nations, Combined Endeavor also looks at long-range plans with nontraditional partners, according to Angyal. "The long-range plans that we work on here have a global impact. When you deploy, it is common to deploy next to nontraditional partners. We deployed a Polish multinational division and there were officers from countries such as Nicaragua, the Philippines, Mongolia and a wide variety of nontraditional and traditional partners."

"There are similar efforts happening in U.S. Pacific Command called Pacific Endeavor and within USEUCOM. We are doing Africa Endeavor with more than 20 African nations in July. All these efforts are focused on interoperability. The short answer is, we try to integrate the global aspect of this because we work with a different partner or group of partners on every mission," Angyal said.

Although Combined Endeavor is not a formal training exercise, it provides many opportunities for spontaneous learning.

"All of the nations come in at some level of capability. One of the intended consequences is that by working in such a diverse group with such professional people you cannot help but walk away from here a better soldier or a better communicator. But for all of the nations here Endeavor represents a big part of their pre-deployment workup. They practice the things that they do when they deploy, whether it is to Afghanistan, Iraq, Kosovo …."

Test results are collected and analyzed by the Joint Interoperability Test Command with the assistance of subject matter experts from the participating countries. The results are published in an interoperability guide that is distributed to the participating nations and has been used as a reference for numerous coalition deployments throughout the world. The interoperability guide is actually a database with information spanning 12 years to the first Endeavor.

"We will have 12,000 after action review comments all stored in this powerful interoperability guide or database. For a multinational communicator, it is like having a copy of the test before the teacher gives it to you. The test is actually when your nation calls on you to deploy," Angyal said.

With the ongoing global war on terrorism and the possibility of a natural disaster or catastrophic event occurring anywhere, cooperation between nations is more important than ever, according to Angyal.

"In today's resource constrained environment, we cannot find a better use for the taxpayer's dollars than the security cooperation that comes from this exercise. When you get a group of 41 nations all working together, this is true phase 0 warfighting. We are working to, first of all, avert your crisis, but in the event of a crisis, to shape the battlespace. That is with 41 nations. That is why we say this is the largest and most effective interoperability effort of its kind." CHIPS